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Amdt. dated August 16, 2006
Reply to Office action of May 17, 2006

REMARKS/ARGUMENTS

In the specification, the paragraphs [0020] and [0021] have been amended to correct typographical errors.

5   In the claims, claim 16 is amended for the original informality.   New claims 19-23 have been added, and are fully supported in the specification (paragraph [0020], especially in the last line with Fig. 1, 2 and 3 in reference).   Hence, claims 1-23 are now pending in this application.

10   Response to Claim Objections:

Claim 16 is currently amended into an apparatus claim in order to correct the informality of being originally a method claim depending on an apparatus claim.

15   Response to Claim Rejections - 35 USC §112:

Claims 9 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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According to paragraph [0028] in the specification, it is clearly stated that in an embodiment of the present invention, "M plus N is equal to the total number of taps P". It is also illustrated in Fig. 1 that in the case of a 14-tap PDFD 200 with state shift register 206 containing 5 cells (corresponding to 5-taps of the PDFD 200) and single shift register

25   208 containing 9 cells (corresponding to 9-taps of the PDFD 200), where P=14, M=5, and N=9, P being equal to M plus N should be apparent.   The Applicants believe that the original claims are fully defined either in the specification or the claims and should be able to particularly point out and distinctly claim the subject matter in which the

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Applicants regard as the invention in claims 9 and 18.

Response to Claim Rejections - 35 USC §103:

5   Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Eyuboglu (U.S. Pat. No. 5,214,672) in view of Azadet (U.S. Pat. No. 7,000,175).

         Regarding claim 10, the Examiner alleges that Eyuboglu (col. 19, lines 4-35)
disclosed a decision device coupled to the first shift registers for outputting a first
10   survivor metric according to survivor metrics in the first shift registers. Eyuboglu
actually teaches the choosing procedure applied in trellis precoding with certain
constraints, which includes mean squared error (MSE) restrictions. The constraints to be
incorporated into any RSSE type decoder as described by Eyuboglu is in fact carried out
in every single code state for the purpose of trellis precoding, which differs from a
15   decision device for choosing among survivor metrics belonging to the numerous shift
registers that resemble the different code states, seemingly having nothing to do with
trellis precoding. Furthermore, the decision device proposed is for the advantage of
reducing state shift registers by utilizing a single second shift register (or somewhat less
than the number of first shift registers) for the remaining stages of all code states, and
20   should benefit P-tap PDFDs in this case, which Eyuboglu apparently does not teach.

         Azadet discloses a P-tap PDFD in a look-ahead fashion to bring the DFU and BMU
out of the critical loop, however, failing to teach of utilizing a decision device for the
reduction of state shift registers in the DFU in the P-tap PDFD's behalf of reducing
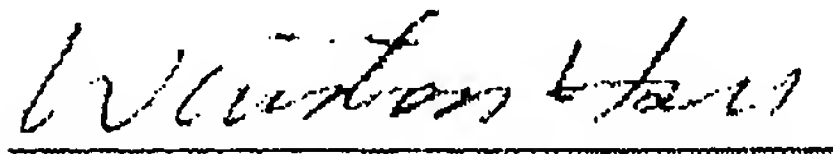25   overall hardware complexity.

         Regarding method claim 1 which corresponds to the apparatus claim 10, arguments
discussed above should also apply.

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       The dependent claims 2-9 and 11-18 should be allowed if the independent claims 1
and 10 are found to be allowable, consideration of the pending claims 1-23 is respectfully
requested.

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Sincerely yours,

Date: _____ August 16, 2006 _____

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is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)

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